

Synergistically active herbicidal mixtures

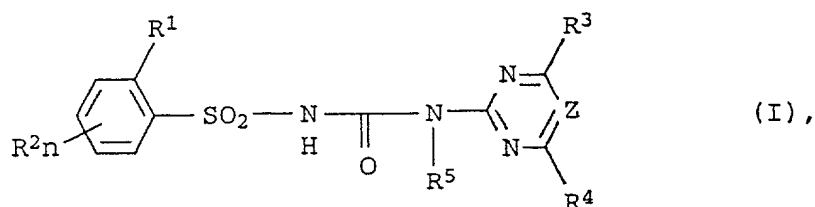
Abstract

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A herbicidal mixture comprising

a) at least one derivative of a sulfonylurea of the formula I

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where the substituents have the following meanings:

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R^1 is C_1 - C_6 -alkyl which has attached to it one to five of the following groups: methoxy, ethoxy, SO_2CH_3 , cyano, chlorine, fluorine, SCH_3 , $S(O)CH_3$;

halogen;

a group ER^6 where E is O, S or NR^7 ;

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 $COOR^8$; NO_2 ;

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 $S(O)_nR^9$, $SO_2NR^{10}R^{11}$, $CONR^{10}R^{11}$;

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R^2 is hydrogen, C_1 - C_4 -alkyl, C_2 - C_4 -alkenyl, C_2 - C_4 -alkynyl, halogen, C_1 - C_4 -alkoxy, C_1 - C_4 -haloalkoxy, C_1 - C_4 -haloalkyl, a C_1 - C_2 -alkylsulfonyl group, nitro, cyano or C_1 - C_4 -alkylthio;

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R^3 is F, CF_3 , CF_2Cl , CF_2H , OCF_3 , OCF_2Cl , or, if R^1 is CO_2CH_3 and R^2 is simultaneously fluorine, R^3 is Cl, or, if R^1 is CH_2CF_3 or CF_2CF_3 , R^3 is methyl, or, if R^4 is OCF_3 or OCF_2Cl , R^3 is OCF_2H or OCF_2Br ;

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R^4 is C_1 - C_2 -alkoxy, C_1 - C_2 -alkyl, C_1 - C_2 -alkylthio, C_1 - C_2 -alkylamino, di- C_1 - C_2 -alkylamino, halogen, C_1 - C_2 -haloalkyl, C_1 - C_2 -haloalkoxy,

R^5 is hydrogen, C_1 - C_2 -alkoxy, C_1 - C_4 -alkyl;

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- 5 R^6 is C_1 - C_4 -alkyl, C_2 - C_4 -alkenyl, C_2 - C_4 -alkynyl or C_3 - C_6 -cycloalkyl, all of which can have attached to them 1 to 5 halogen atoms, with the exception of allyl, difluoromethoxy, chlorodifluoromethoxy and 2-chloroethoxy, if E is O or S. In the event that E is O or NR^7 , R^6 is furthermore also methylsulfonyl, ethylsulfonyl, trifluoromethylsulfonyl, allylsulfonyl, propargylsulfonyl or dimethylsulfamoyl;
- 10 R^7 is hydrogen, methyl or ethyl
- 15 R^8 is a C_1 - C_6 -alkyl group which can have attached to it up to three of the following radicals: halogen, C_1 - C_4 -alkoxy, C_1 - C_4 -alkylthio, C_1 - C_4 -haloalkoxy, C_1 - C_4 -alkoxy- C_1 - C_2 -alkoxy, C_3 - C_7 -cycloalkyl and/or phenyl; a C_5 - C_7 -cycloalkyl group which can have attached to it up to three C_1 - C_4 -alkyl groups; C_3 - C_6 -alkenyl or C_3 - C_6 -alkynyl;
- 20 R^9 is a C_1 - C_6 -alkyl group which can have attached to it one to three of the following radicals: halogen, C_1 - C_4 -alkoxy, C_1 - C_4 -alkylthio, C_1 - C_4 -haloalkoxy, C_1 - C_4 -alkoxy- C_1 - C_2 -alkoxy, C_3 - C_7 -cycloalkyl and/or phenyl; a C_5 - C_7 -cycloalkyl group which can have attached to it
- 25 one to three C_1 - C_4 -alkyl groups; C_3 - C_6 -alkenyl or C_3 - C_6 -alkynyl;
- 30 R^{10} is hydrogen, C_1 - C_2 -alkoxy, C_1 - C_6 -alkyl, or together with R^{11} is a C_4 - C_6 -alkylene chain in which one methylene group can be replaced by an oxygen atom or a C_1 - C_4 -alkylimino group;
- 35 R^{11} is a C_1 - C_4 -alkyl group which can have attached to it one to four halogen or C_1 - C_4 -alkoxy radicals; C_3 - C_6 -cycloalkyl
- n is 0 - 3
- o is 1 - 2
- 40 Z N or CH,
- or their environmentally compatible salts

and

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- b) a synergistically active amount of at least one herbicidal compound selected from the groups b1 to b41 which have been given in claim 1, herbicidal compositions, and methods of controlling undesirable vegetation.

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FOOTNOTES